The Impact of New York State's 2016 Mold Licensing Requirement on Indoor Air Quality Assessments

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Session 8

The Impact of New York State's 2016 Mold Licensing Requirement on Indoor Air Quality Assessments

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Outline

• New York State Department of Labor 2016
• Mold regulations
• New York experience
• Who is doing it?
• Who should be doing it?
• Recommendations in streamlining IAQ
Outline

• New York State Department of Labor 2016
• Mold regulations
• Who is doing it?
• Who should be doing it?
• Recommendations in streamlining IAQ
New York experience
Hazard Identification
Types of Hazards

- Chemical
- Biological
- Physical
- Safety
- Ergonomic
Lead and Asbestos Hazards
Wall Moisture Levels

Two types:
1. Conductivity (pin)
2. Electromagnetic (deep)

Wood Moisture Content (for a typical softwood)

<table>
<thead>
<tr>
<th>7%</th>
<th>9%</th>
<th>12%</th>
<th>14%</th>
<th>16%</th>
<th>20%</th>
<th>24%</th>
<th>30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Borderline</td>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no fungal growth</td>
<td>fungal growth possible at 16%</td>
<td>fungal growth and potential wood decomposition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Water Line

One month after Hurricane Sandy

Still wet at 19%
What is Mold?

- Mold is a type of Fungi: Many species
- Fungi (kingdom)
  - Mold, Mushrooms, Yeasts
- Small plant-like living organisms
- Saprophytes (use organic matter as food)
- Each has specific needs for growth
  - Moisture, temperature, nutrients, light
Where does mold come from and how does it grow?

• Naturally occurring and found everywhere
• Decomposes all living material
• Over 200,000 species identified
• It is everywhere; on your skin, clothes and food
Mold spores are like plant seeds

Spores land on bread → sprout → grow roots → then grow branches with more spores
Mold: Friend or Foe?

Each visible colony originated from a single cell.
Outside

Agitated Room

Bathroom

Quiet Room
Swab Sampling

4” x 4”

or

100 cm²
February 5, 2015:

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Article 32 of the labor law, as added by chapter 551 of the laws of 2014, is amended to read as follows:

Source: https://labor.ny.gov/workerprotection/safetyhealth/mold/pdf/Chapter_Amendment.pdf
AN ACT to amend the labor law, in relation to requiring the licensure of mold assessment and remediation specialists and setting minimum work standards for mold assessment and remediation specialists; to amend chapter 551 of the laws of 2014 amending the labor law relating to requiring the licensure of mold assessment and remediation specialists and setting minimum work standards for mold assessment and remediation specialists, in relation to the effectiveness thereof; and to repeal section 97-popp of the state finance law relating to the mold assessment and remediation account.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Article 32 of the labor law, as added by chapter 551 of the laws of 2014, is amended to read as follows:

ARTICLE 32
LICENSING OF MOLD INSPECTION, ASSESSMENT AND REMEDIATION SPECIALISTS AND MINIMUM WORK STANDARDS

Title 1. Licensing of mold inspection, assessment and remediation specialists and minimum work standards (Secs. 930-940.)
2. Minimum work standards for the conduct of mold assessments and remediation by licensed persons (Secs. 945-948.)

TITLE 1
LICENSING OF MOLD INSPECTION, ASSESSMENT AND REMEDIATION SPECIALISTS AND MINIMUM WORK STANDARDS

Section 930. Definitions.
931. Licensing requirements.
932. License; procedure.
933. Exceptions.

Source:
https://labor.ny.gov/workerprotection/safetyhealth/mold/pdf/Chapter_Amendment.pdf
Outline

• New York State Department of Labor 2016
• **Mold regulations**
• Who is doing it?
• Who should be doing it?
• Recommendations in streamlining IAQ
Mold-Related Licenses

CES training
Mold-Related Licenses

Mold Abatement Worker

• Only perform mold abatement work
• Perform any type of mold abatement work in any capacity other than a sole proprietorship
Mold-Related Licenses

Mold Abatement Worker Supervisor

- Supervise mold abatement workers
- Perform any type of mold abatement work in any capacity other than a sole proprietorship
Mold-Related Licenses

Mold Remediation Contractor

• Supervise mold abatement workers
• Own/operate a sole proprietorship mold remediation company
• Write/approve mold remediation work plans
Mold-Related Licenses

Mold Assessor

• Own/operate a sole proprietorship mold assessment company
• Perform mold assessment
• Write mold remediation plans
Mold-Related Licenses

CES training
Outline

• New York State Department of Labor 2016
• Mold regulations
• **Who is doing it?**
• Who should be doing it?
• Recommendations in streamlining IAQ
Standard Guide for
Readily Observable Moisture Affected Materials and
Conditions Conducive to Elevated Moisture in Commercial
Buildings: Visual Moisture Assessment Process

This standard is issued under the fixed designation E3026; the number immediately following the designation indicates the year of
original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A
superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 Purpose—The purpose of this guide is to define good commercial practice for conducting a baseline survey for readily observable moisture affected materials and conditions conducive to elevated moisture in a commercial building related to a commercial real estate transaction or commercial real estate asset management by conducting: a walk-through survey, document reviews, and interviews as outlined within this guide. This guide is intended to provide a practical means for the visual identification of moisture affected materials and physical deficiencies conducive to elevated moisture as a result of water infiltration through the building envelope or substructure, or generated within the subject building as a result of processes or mechanical systems, excluding de minimis conditions. This guide is to allow a user to assess general moisture concerns, as well as the potential need for further assessment or other actions that may be appropriate that are beyond the scope of this guide. For purposes of this guide, the initialism “VMA” or “Visual Moisture Assessment” is used interchangeably with this guide’s full title.

Section 12 of this guide identifies, for informational purposes, certain physical conditions (not an all-inclusive list) that may exist at a property and certain activities or procedures (not an all-inclusive list) that are beyond the scope of this guide but may warrant consideration by users. The need to investigate any such conditions in the provider’s scope of services should be evaluated based upon, among other factors, the nature of the property and the reason for conducting the VMA. The scope of such further investigation or testing services should be agreed upon between the user and the provider as additional services, which are beyond the scope of this guide, prior to initiation of the VMA process. The responsibility to initiate work beyond the scope of this guide lies with the user.

1.3.1 Sampling for suspect fungi and other forms of biological growth is a non-scope consideration under this guide.

1.3.2 Sampling or otherwise measuring for moisture is a non-scope consideration under this guide.

1.4 Organization of the Guide—This guide has 13 sections and three appendices. Section 1 defines the Scope. Section 2 is Referenced Documents. Section 3 is Terminology. Section 4

1. Scope
2. Referenced Documents
3. Terminology
4. Significance & Use
5. User Responsibilities
6. Survey
7. The Provider
8. Document and Record Review
9. Interviews with Owners and Occupants
10. Walk-Through Survey
11. Evaluation and Report Preparation
12. Out of Scope Considerations
13. Keywords for Internet Reference
14. Appendices

ASTM Technical Contact: Jim E. Bartlett, EMG
Scope and Purpose of the Guide:

“intended to provide a practical means for the visual identification of moisture affected materials and physical deficiencies conducive to elevated moisture as a result of water infiltration through the subject building’s envelope or substructure, or generated within the subject building as a result of processes or mechanical systems, excluding de minimis conditions”
ASTM E 3026-15

Elements of a VMA:

- Document reviews
- Interviews (Appendix X2)
- Walk-through survey (Appendix X3)
- Report
ASTM E 3026-15: Document Reviews

Review of readily available documentation to augment the walk-through survey and to assist the consultant’s understanding of the subject property.

- Repair/Maintenance records related to moisture concerns
- Moisture Intrusion Survey, Mold/Microbial Growth Survey
- IAQ reports
- Violations, agency correspondence, tenant complaints
- Previous ESAs and PCAs
- Building occupancy records, turnover stats, and rent roll
- Leasing literature, site info, floor plans, etc.
- Drawings and Specs (as-builts)

ASTM Technical Contact: Jim E. Bartlett, EMG
ASTM E 3026-15: Interviews

**Inquiries** regarding historical repairs and replacements, history of tenant complaints, level of preventive maintenance, pending repairs and improvements, frequency of repairs/replacements, and ongoing/pending litigation related to moisture.

- Interviewee identified in advance by owner, user, or key site manager.
- Should be person(s) knowledgeable of the physical characteristics, maintenance, and repair of the site.
- Reliance as deemed reasonable by consultant
- **Appendix X2 – Interview Checklist**
ASTM E 3026-15: Walk-Through Survey

General, Site and Surroundings

Sprinkler overspray
Site slope/drainage
Standing Water

Downspout drainage
Detention Ponds
Water Features

ASTM Technical Contact: Jim E. Bartlett, EMG
ASTM E 3026-15: Walk-Through Survey

Building Exterior

- Façade Issues
- Soil abutting building
- Siding Issues
- Ice jams
- Evidence of leaks
- Moisture-affected materials

ASTM Technical Contact: Jim E. Bartlett, EMG
ASTM E 3026-15: Walk-Through Survey

Roofs

- Lap/seam failure
- Ponding/drainage
- Penetrations
- Flashing issues
- Exhaust/venting issues
- Extensive repairs

ASTM Technical Contact: Jim E. Bartlett, EMG
ASTM E 3026-15: Walk-Through Survey

HVAC, Plumbing and Mechanical

Mechanical system leaks

Plumbing leaks

Sump Pumps

Mechanical Condensation

Piping Condensation

Condensate drainage

ASTM Technical Contact: Jim E. Bartlett, EMG
ASTM E 3026-15: Walk-Through Survey

Building Interior

- Condensation
- Visible moisture
- Fungal growth
- Stained ceiling tiles
- Damp materials
- Basement areas

ASTM Technical Contact: Jim E. Bartlett, EMG
ASTM E 3026-15: VMA Elements

Common Diagnostic Enhancements

- Moisture Meter
- Borescope Probe
- Infrared Camera
- RH/Temp Meter
- Microbial Air Sampler
- Microbial Tape Sampling

ASTM Technical Contact: Jim E. Bartlett, EMG
Andersen Air Sampler

N1-N6 (top-bottom)
Used with filter for particle sizing
Or
With agar plates for Microbial assessment

Flow rate – 1 CFM
(approx. 21 L/min)
Mold Air Sampling Video
EMSL

Andersen N6 Microbial Air Sampler

http://www.youtube.com/watch?v=1rkfsWarfcl
Labor Law Article 32 Section 946 (1)

A licensed mold remediator cannot perform work on a project without an assessment performed by a licensed assessor.

Before beginning site preparation work, the law requires that a licensed remediator:

• obtain a copy of the licensed mold assessor's mold remediation plan from the client
• prepare a mold remediation work plan that fulfills all of the requirements of the licensed assessor's mold remediation plan
• provide a copy of the newly prepared work plan to the client.
Labor Law Section 936 (2)

No licensee shall perform both mold assessment and mold remediation on the same project.
Outline

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"Hopefully, the 250th year for America will see a world that is more peaceful, more just and more free.

On our 100th anniversary, in 1876, citizens from across our Nation came to Philadelphia to celebrate America's centennial. At that celebration, the country's builders and artists and inventors showed off their wonderful creations."
“Alexander Graham Bell displayed his telephone for the first time.

Remington unveiled the first typewriter. An early attempt was made at electric light.

Thomas Edison showed an automatic telegraph and an electric pen. Imagine the wonders our country could know in America's 250th year.”
Who should be doing it?
CCNY – EPA Annual Informational Day

U.S. Environmental Protection Agency Region 2
New York City Headquarters
ANSI President and CEO S. Joe Bhatia meets City College of New York Honors Students and Dr. Angelo Lampousis
ANSI’s World Standards Week 2016 in Washington, D.C.
ANSI-NIST International Standards Simulation Competition

Angelo Lampousis (center-left), Lecturer Earth and Atmospheric Sciences, City College of New York
The Pursuit of Longevity Fuels the Need for International Life Expectancy Standards

Julie M. Kapp and Debra Parker Oliver

This paper was the winning entry in the 2015 World Standards Day paper competition.

Introduction

The United States has been labeled with a "health disadvantage." Additionally, the US has for decades experienced the highest infant mortality rates among peer countries, and ranks poorly in other health outcomes such as life expectancy. Despite these issues, US children are less likely than those in peer countries to live to age 85, the age at which life expectancy is highest. The US ranks second to last in life expectancy at birth, a measure of health and wealth.

Why the shorter life expectancy?

Two factors contribute to the shorter life expectancy: health care and environmental factors. Despite access to quality health care, Americans have shorter life expectancies than people in other countries. Life expectancy in the US is lower than in most other countries, and this difference has been growing for the past three decades. While life expectancy at birth is a useful measure of overall health, it does not capture the health of the population at older ages. The United States has a lower proportion of older adults than other countries, leading to a shorter life expectancy overall.

The Standards

The National Academy of Sciences, the National Academy of Medicine, and the Institute of Medicine have recommended that standards be developed to improve health care and prevent chronic diseases. The Standards for Longevity Fuels the Need for International Life Expectancy Standards were developed to address these needs and to improve the health of the population.

The Standards can be defined as written definitions, limits, or rules, approved and monitored for compliance by an authoritative agency or professional organization. The Standards for Longevity Fuels the Need for International Life Expectancy Standards are intended to provide a framework for improving health care and preventing chronic diseases. The Standards are developed by a panel of experts in the field and are reviewed and updated regularly to ensure their relevance and effectiveness.
About the Author

Karmin Chong is a graduate student in Earth System Science & Environmental Engineering (ESSEE) at the City College of New York (CCNY). He can be reached at kchong01@citymail.cuny.edu or at kaminchong@gmail.com.

Introduction

This paper explores the meaning of standards and their importance in modern society by establishing what it would be like if standards did not exist, through a retrospective look at society before the enforcement of standards incorporated into regulations in certain businesses. This paper uses historical examples such as the meat-packing industry in the early 1900s, and the chemical industry in the 1950s, to explicate the necessity of the formation of Federal-level regulatory agencies like the US Food and Drug Administration (FDA) and the US Environmental Protection Agency (EPA). These two agencies were created to serve and protect the public from harmful business practices. Their legislative formation was due to public outcry sparked in part by revelations into the practices of these two industries exposed in two revolutionary novels, The Jungle by Upton Sinclair, and Silent Spring by Rachel Carson. The Jungle revealed the horrific conditions of the meat-packing industry, which helped precipitate the force behind both a meat inspection law and a comprehensive food and drug law, based on standards, culminating in the establishment of the FDA. Silent Spring’s attack on the indiscriminate use of pesticides fueled an environmental movement, creating the foundation for the creation of the EPA to protect both the health of the environment and the constituents of it.

The Standards

Standards can be defined as written definitions, limits, or rules, approved and monitored for compliance by an authoritative agency or professional or recognized body as a minimum acceptable benchmark. Within the definition, there are three classifications: government standards and specifications enforced by law; proprietary standards developed by a firm or organization and placed in public domain for widespread use; and voluntary standards established by consultation and consensus and available for use by any person, organization, or industry. Regardless of the classification, all standards have the purpose of establishing some sort of guiding principles to meet specific, well-defined goals or needs based on consensus and due process. As such, they are vitally essential to a functional civilized society. Without any standards or, in many cases, enforcement of said standards through regulation, the world as we know it would be a different and much more difficult place to live in. For example, without standards, commercial products could go untested, which would be disastrous for consumers as they could be rendered sick from spoiled food or harmed by hazardous chemicals within goods. In addition, communication and collaboration between people, machines, parts, and products in a global marketplace would be nearly impossible without international standards that enable comparison and interoperability. In essence, standards are a necessity, as they are collective knowledge: powerful tools that can help drive innovation and increase productivity by making organizations more successful and the lives of everyday people easier, safer, and healthier.2

As a current engineering student majoring in environmental engineering and aspiring for a career as a professional engineer, I have been educated on a code of ethics—specifically, the National Society of Professional Engineers (NSPE) Code of Ethics for Engineers. The first and foremost fundamental canon of the code is to “Hold paramount the safety, health, and welfare of the public,” a tenet to which I plan to abide to the best of my ability. Standards are instruments to realize this principle; however, they need to be implemented and enforced properly to have any substantial merit.

The United States is often seen as having a democratic capitalist political-economic system; in other words, the American economy is built upon a capitalist foundation ingrained into the political system. Of course, such a system has its benefits: indices of economic freedom correlate strongly with higher income, life expectancy, and standards of living. Nevertheless, unfettered capitalism has its own drawbacks. Corporations are inherently revenue-driven and as a result, in an unregulated capitalist scenario, bribery and corruption would flourish, corners would be cut for the sake of profit margins, human rights violations would be rampant, and the income inequality gap would be wider than ever. It would transform a once representative democratic republic into a corporate plutocratic oligarchy. Therefore, to prevent this situation from occurring, enforceable Federal regulations and standards are an absolute requirement.

An example of strong Federal standards to protect US citizens are the regulatory standards set forth by the US Food and Drug Administration (FDA), which is responsible for protecting the public health by assuring the safety, efficacy, and security of human and veterinary drugs, biological products, medical devices, the nation’s food supply, cosmetics, and products that emit radiation.3 Standard-setting activities include matters such as the development of performance characteristics, testing methodology, manufacturing practices, product standards, scientific protocols, compliance criteria, ingredient specifications, labeling, and other technical or policy criteria. The storied history behind the establishment of the FDA is a clear illustration of the essential nature of standards. The Jungle was a novel written by the American journalist and novelist Upton Sinclair in 1906. Sinclair considered a muckraker, a journalist whose actions exposed corruption in government and business. In his novel, Sinclair portrayed the harsh conditions and exploited lives of immigrants in Chicago and similar industrial cities. However, what was most deplorable to the contemporary readers was his expose of the health violations and unsanitary practices in the American meat-packing industry during the early 20th century. It was his intense description of
ANSI’s World Standards Week 2016 in Washington, D.C. ANSI-NIST International Standards Simulation Competition

Stephen Elliott (right), Director
International Center for Biometric Research
Purdue University
ANSI’s World Standards Week 2016 in Washington, D.C.

ANSI-NIST International Standards Simulation Competition

Peter Sunderland (left), Associate Professor
Department of Fire Protection Engineering
University of Maryland
ANSI’s World Standards Week 2016 in Washington, D.C.
ANSI-NIST International Standards Simulation Competition

Joe Cascio (left), Esq, Co-Director
Environmental & Energy Management Institute
George Washington University
Judges observed and evaluated all activities at ANSI’s World Standards Week 2016 in Washington, D.C. The event was part of the ANSI-NIST International Standards Simulation Competition.
Angelo Lampousis (first row, left), professor, City College of New York-CUNY, and James Thomas (first row, second from left), president, ASTM International, pose with Macaulay Honors College students during Thomas' visit.

Macaulay Honors Students Meet ASTM President in New York City

In the second half of the show Lampousis and Thomas were joined in the studio by one of the Macaulay students, James Botwina, who asked questions on behalf of his classmates.

Other topics discussed during the show included:
- The history of ASTM International;
OSHA HAZWOPER standard 29 CFR 1910.120 (3)(e)(i)
CUNY School of Public Health
CCNY – FDNY collaboration

ceny.cuny.edu/eas/industry
CCNY – FDNY collaboration
CCNY – Industry (CES)
CCNY – Industry (CES)
Outline

- New York State Department of Labor 2016
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- **Recommendations in streamlining IAQ**
Mold Myths

1. Your house can be mold free
2. Bleach works
3. Mold can grow anywhere (eats organic, but can grow)
4. New houses have less mold than old
5. Can’t see mold...no problem
6. You can look at mold and tell what it is
7. Only toxic mold harms health
8. Problem solved when you remove mold
CCNY, 1921
Albert Einstein’s first visit and lectures series in the United States
Questions?

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A BSI Professional Services Company